

June 1883.

Mr. Marth, Satellite of Neptune.

479

Greenwich, Noon.	<i>Titan.</i>		<i>Iapetus.</i>	
	$\alpha_e - A$	$\delta_e - D$	$\alpha_s - A$	$\delta_s - D$
1884, Mar. 17	- 6°23'	- 72°2'	+ 33°57'	+ 17°6'2"
18	- 1°66'	- 78°5'	+ 32°28'	+ 182°0'
19	+ 3°14'	- 73°7'	+ 30°82'	+ 186°7'
20	+ 7°49'	- 58°5'	+ 29°19'	+ 190°4'
21	+ 10°77'	- 35°2'	+ 27°40'	+ 193°0'
22	+ 12°53'	- 6°9'	+ 25°47'	+ 194°6'
23	+ 12°48'	+ 22°2'	+ 23°42'	+ 195°1'
24	+ 10°59'	+ 48°0'	+ 21°26'	+ 194°4'

Ephemeris of the Satellite of Neptune, 1883-84. By A. Marth.

P, angle of position of the minor axis of the satellite's apparent orbit, in the direction of superior conjunction.

a, b, major and minor semi-axis of the apparent orbit.

u-U, longitude of the satellite in its orbit reckoned from the point which is in superior conjunction with the planet, or in opposition to the Earth.

U+180°, planetocentric longitude of the Earth, reckoned in the satellite's orbit from the ascending node on the celestial equator.

B, planetocentric latitude of the Earth above the plane of the orbit.

$^{\text{ob}}$ Gr.	P	a	b	u-U	L.E.	U	B
1883.							
Sept. 6	318°83	16°63	7°31'	181°56	612°51	137°95	26°08
16	318°76	16°72	7°34'	74°07	.47	138°05	26°05
26	318°66	16°80	7°36'	326°54	.42	138°20	25°99
Oct. 6	318°52	16°86	7°37'	218°96	.37	138°39	25°94
16	318°36	16°91	7°37'	111°33	.33	138°62	25°82
26	318°18	16°95	7°35'	3°66	.31	138°87	25°71
Nov. 5	317°98	16°97	7°33'	255°97	.29	139°14	25°59
15	317°78	16°97	7°30'	148°26	.29	139°42	25°46
25	317°59	16°96	7°26'	40°55	.29	139°70	25°33
Dec. 5	317°41	16°92	7°21'	292°84	.30	139°96	25°21
15	317°25	16°87	7°16'	185°14	.34	140°19	25°10
25	317°11	16°81	7°10'	77°48	.37	140°38	25°00
1884.							
Jan. 4	317°00	16°73	7°05'	329°85	.41	140°53	24°92
14	316°93	16°65	7°00'	222°26	.46	140°63	24°86
24	316°89	16°56	6°95'	114°72	.52	140°68	24°83
Feb. 3	316°90	16°46	6°91'	7°24	.57	140°67	24°82
13	316°94	16°37	6°88'	259°81	.63	140°61	24°84
23	317°02	16°27	6°85'	152°44	612°69	140°49	24°88
Mar. 4	317°14	16°19	6°83'	45°13		140°31	24°95

If the values of P , a , b and $u - U$ are interpolated for the times for which the apparent places of the satellite are required, the position-angles p and distances s are found by

$$\begin{aligned}s \sin(P-p) &= a \sin(u-U), \\ s \cos(P-p) &= b \cos(u-U).\end{aligned}$$

The satellite moves in the direction of decreasing position-angles, and will be at its greatest elongations and at its *superior* and *inferior* conjunctions with the planet at the following hours, Greenwich M.T.:—

<i>inf.</i> elong. $P+90^\circ$	<i>sup.</i> conj. P	<i>sp.</i> elong. $P-90^\circ$	<i>inf.</i> conj. $P+180^\circ$
$s = a$	b	a	b
1883.	h	h	h
Sept. 7 10.7	Sept. 8 2.9	Sept. 10 9.2	Sept. 11 20.4
13 7	14 19.0	16 6.2	17 17.5
19 4.8	20 16.0	22 3.3	23 14.6
25 1.8	26 13.1	28 0.4	29 11.7
30 22.9	Oct. 2 10.2	Oct. 3 21.5	Oct. 5 8.7
Oct. 6 20.0	8 7.3	9 18.6	11 5.8
12 17.1	14 4.4	15 15.6	17 2.9
18 14.2	20 1.5	21 12.7	23 0.0
24 11.3	25 22.6	27 9.8	28 21.1
30 8.4	31 19.7	Nov. 2 6.9	Nov. 3 18.2
Nov. 5 5.5	Nov. 6 16.8	8 4.0	9 15.3
11 2.6	12 13.9	14 1.2	15 12.4
16 23.7	18 11.0	19 22.3	21 9.5
22 20.8	24 8.1	25 19.4	27 6.7
28 17.9	30 5.2	Dec. 1 16.5	Dec. 2 3.8
Dec. 4 15.0	Dec. 6 2.3	7 13.6	9 0.9
10 12.2	11 23.4	13 10.7	14 22.0
16 9.3	17 20.5	19 7.8	20 19.1
22 6.4	23 17.6	25 4.9	26 16.2
28 3.4	29 14.7	31 2.0	Jan. 1 13.3
1884.			
Jan. 3 0.5	Jan. 4 11.8	Jan. 5 23.1	7 10.4
8 21.6	10 8.9	11 20.2	13 7.4
14 18.7	16 6.0	17 17.2	19 4.5
20 15.8	22 3.0	23 14.3	25 1.6
26 12.8	28 0.1	29 11.4	30 22.6
Feb. 1 9.9	Feb. 2 21.2	Feb. 4 8.4	Feb. 5 19.7
7 6.9	8 18.2	10 5.5	11 16.7
13 4.0	14 15.2	16 2.5	17 13.8
19 1.0	20 12.3	21 23.5	23 10.8
24 22.0	26 9.3	27 20.6	29 7.8
Mar. 1 19.1	Mar. 3 6.3	Mar. 4 17.6	Mar. 6 4.8